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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,362	12/16/2003	Brian Andrew Carr	1400B-000010/US	6018

27572 7590 11/09/2009

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EXAMINER	
KAO, JUTAI	

ART UNIT	PAPER NUMBER
2473	

MAIL DATE	DELIVERY MODE
11/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/737,362	CARR, BRIAN ANDREW	
	Examiner	Art Unit	
	JUTAI KAO	2473	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-12,14-18 and 21-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-12,14-18 and 21-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/21/2009 has been entered.

Response to Amendment

Amendments filed on 08/21/2009 change the scopes of the previously filed claims. New grounds of rejections are applied to the amended claims.

Response to Arguments

2. Applicant's arguments with respect to claims 10-12, 14-15, 17-18 and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 26-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 is currently dependent on canceled claim 1 and claim 27 depends on claim 26. For the purpose of prior art rejections, claim 26 is assumed to be dependent on independent claim 10.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 10, 12, 14, 15, 17-18, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sikdar (US 7,277,425) in view of Barbas (US 2002/0097672).

Sikdar discloses a high-speed router switching architecture including the following features.

Regarding claim 10, a packet switched backplane (see backplane shown in Fig. 3) comprising a backplane (see Fig. 3) including a first node slot having a plurality of connectors including a first Ethernet connector for transferring and receiving Ethernet packets (see, i.e. line card slot LC1 in Fig. 3; also see “packet-input/output cards…Ethernet ports” recited in column 5, lines 26-36); a second node slot having a plurality of connectors including a second Ethernet connector fort transferring and

receiving Ethernet packets (see, i.e. line card slot LC13 in Fig. 3; also see "packet-input/output cards…Ethernet ports" recited in column 5, lines 26-36); a first aggregation slot having a plurality of single connectors including a third Ethernet connector for transferring and receiving Ethernet packets (see Fig. 3 and 4, i.e. switch fabric slot SF2, which includes a plurality of single rows of connection pins; wherein as shown in Fig. 4, one of the single connector row includes the connections of 112, 114 with LC13 and connections 116, 118 with LC1; each of which may transfer Ethernet packets as shown in column 5, lines 26-36); a first dedicated link establishing a direct connection between the first and the third Ethernet connectors (see Fig. 4, connections of 116, 118 between SF2 and LC13); a second dedicated link establishing a direct connection between the second and the third Ethernet connectors (see Fig. 4, connections of 112, 114 between SF13 and LC13).

Regarding claim 12, a second aggregation slot having a plurality of connectors including a fourth Ethernet connector transferring and receiving Ethernet packet (see SF3 in Fig. 3 having a plurality of rows of connection pins and the fourth Ethernet connector being one of rows of connection pins, similar to those shown in connections 112-118 in Fig. 4); a third dedicated link establishing a direct connection between the first and the fourth Ethernet connectors (see Fig. 4, connections of 116, 118 between SF2 and LC13; similar connection are made to other switch fabric cards; such as SF3); a fourth dedicated link establishing a direct connection between the second and the fourth Ethernet connectors (see Fig. 4, connections of 112, 114 between SF13 and LC13; similar connection are made to other switch fabric cards; such as SF3).

Regarding claim 14, a data processing system comprising (see Fig. 3): a packet switched backplane (see backplane shown in Fig. 3) comprising a backplane (see Fig. 3) including a first node slot having a first single Ethernet connector for transferring and receiving Ethernet packets (see, i.e. line card slot LC1 in Fig. 3; also see "packet-input/output cards…Ethernet ports" recited in column 5, lines 26-36, see the single connector for connection 116 and 118); a second node slot having a second single Ethernet connector fort transferring and receiving Ethernet packets (see, i.e. line card slot LC13 in Fig. 3; also see "packet-input/output cards…Ethernet ports" recited in column 5, lines 26-36; see the single connector for connection 112 and 114); a first aggregation slot having a third single Ethernet connector for transferring and receiving Ethernet packets (see Fig. 3 and 4, i.e. switch fabric slot SF2, which includes a plurality of single rows of connection pins; wherein as shown in Fig. 4, one of the single connector row includes the connections of 112, 114 with LC13 and connections 116, 118 with LC1; each of which may transfer Ethernet packets as shown in column 5, lines 26-36); a first dedicated link establishing a direct connection between the first and the third Ethernet connectors (see Fig. 4, connections of 116, 118 between SF2 and LC13); a second dedicated link establishing a direct connection between the second and the third Ethernet connectors (see Fig. 4, connections of 112, 114 between SF13 and LC13); a first aggregation card that is pluggable into the first aggregation slot (see the plugging of switch fabric cards in to SF ports as shown in Fig. 12) including a function unit that performs a main technical function (see "Each slot has two lower connector regions…used to distribute power and ground signals to a switch fabric card" recited in

column 7, lines 46-56) in addition to Ethernet packet routing (see "trace routing layer" recited in column 7, lines 57-67, which shows the routing between the line cards and the switch fabric cards).

Regarding claim 15, a first node card pluggable into the first node slot; and a second node card pluggable into the second node slot (see Fig. 12 wherein node cards are plugged into node slots).

Regarding claim 17, a second aggregation slot having a fourth single Ethernet connector for transferring and receiving Ethernet packets (see SF3 in Fig. 3 having a plurality of rows of connection pins and the fourth Ethernet connector being one of rows of connection pins, similar to those shown in connections 112-118 in Fig. 4); a third dedicated link establishing a direct connection between the first and the fourth Ethernet connectors (see Fig. 4, connections of 116, 118 between SF2 and LC13; similar connection are made to other switch fabric cards; such as SF3); a fourth dedicated link establishing a direct connection between the second and the fourth Ethernet connectors (see Fig. 4, connections of 112, 114 between SF13 and LC13; similar connection are made to other switch fabric cards; such as SF3).

Regarding claim 18, a second aggregation card that is pluggable into the second aggregation slot (see the plugging of switch fabric cards in to SF ports as shown in Fig. 12) and that includes a function unit that performs a main technical function (see "Each slot has two lower connector regions…used to distribute power and ground signals to a switch fabric card" recited in column 7, lines 46-56) in addition to Ethernet packet

routing (see "trace routing layer" recited in column 7, lines 57-67, which shows the routing between the line cards and the switch fabric cards).

Regarding claim 23, wherein the Ethernet bridging unit of the first aggregation card is an Ethernet switch (see switch fabric 80 of Fig. 10 within a switch fabric card; which as shown earlier, that the system of Sikdar processes Ethernet traffic, thus the switch fabric processes Ethernet switching).

Regarding claim 24, a packet switched backplane (see backplane shown in Fig. 3) comprising a backplane employing a packet switched fabric (see Fig. 3) including a first node slot having a plurality of connectors including a first single Ethernet connector for transferring and receiving Ethernet packets (see, i.e. line card slot LC1 in Fig. 3; also see "packet-input/output cards…Ethernet ports" recited in column 5, lines 26-36; see the plurality of single connectors JLC4A-C in Fig. 3); a second node slot having a plurality of connectors including a second Ethernet connector fort transferring and receiving Ethernet packets (see, i.e. line card slot LC13 in Fig. 3; also see "packet-input/output cards…Ethernet ports" recited in column 5, lines 26-36; also see the single connectors at other node slots); a first aggregation slot having a plurality of single connectors including a third single Ethernet connector for transferring and receiving Ethernet packets (see Fig. 3 and 4, i.e. switch fabric slot SF2, which includes a plurality of single rows of connection pins; wherein as shown in Fig. 4, one of the single connector row includes the connections of 112, 114 with LC13 and connections 116, 118 with LC1; each of which may transfer Ethernet packets as shown in column 5, lines 26-36) and that receives an aggregation card (see Fig. 12, which shows switch fabric

cards being connected to the switch fabric slots), wherein the aggregation card is a node card equipped with an Ethernet bridging unit (see Fig. 10, which shows the switch fabric card having a switch fabric 80, acting as the Ethernet bridging unit); a first dedicated link establishing a direct point-to-point connection between the first and the third Ethernet connectors (see Fig. 4, connections of 116, 118 between SF2 and LC13); and a second dedicated link establishing a direct point-to-point connection between the second and the third single Ethernet connectors (see Fig. 4, connections of 112, 114 between SF13 and LC13); regarding claim 24, wherein , when first, second node cards, and an aggregation card are plugged in the first, second node slots, and the first aggregation slot respectively (see Fig. 12, wherein all node cards and switch fabric cards are plugged in), the Ethernet bridging unit of the aggregation card is coupled with the third single Ethernet connector (see Fig. 10, wherein the bridging unit, the switch fabric 80 is coupled with all connectors connected to the line cards).

Sikdar does not explicitly disclose the following features: regarding claim 10, wherein the third Ethernet connector allows a first switch to turn on and off data communication between the first Ethernet connector and the second Ethernet connector and via the first and second dedicated links; regarding claim 12, wherein the fourth Ethernet connector allows a first switch to turn on and off data communication between the first Ethernet connector and the second Ethernet connector and via the third and fourth dedicated links; regarding claim 14, an Ethernet bridging unit that switches Ethernet packets, wherein the third single Ethernet connector, when the first aggregation card is plugged into the first aggregation slot, allows the Ethernet bridging

unit to turn on and off data communication that is between the first Ethernet connector and the second Ethernet connector and that is via the first and second dedicated links; regarding claim 15, wherein, when the first node card, the second node card, and the first aggregation card are plugged into the first node slot, the second node slot, and the first aggregation slot respectively, the Ethernet bridging unit of the first aggregation card is coupled to the third Ethernet connector and selectively switches Ethernet packets between the first node card and the second node card via the first and second dedicated link; regarding claim 18 wherein, when the first node card, the second node card, and the second aggregation card are plugged into the first node slot, the second node slot, and the second aggregation slot respectively, the Ethernet bridging unit of the second aggregation card is coupled to the third Ethernet connector and selectively switches Ethernet packets between the first node card and the second node card via the third and fourth dedicated link; regarding claim 24, wherein the Ethernet bridging unit of the aggregation card receives a packet from the first node card via the first dedicated link and further selectively transmits the received packet to the second node card via the second dedicated link.

Barbas discloses a redundant control architecture for a network device including the following features.

Regarding claim 10, wherein the third Ethernet connector allows a first switch to turn on and off data communication between the first Ethernet connector and the second Ethernet connector and via the first and second dedicated links (see Claim 1, "first and second data paths associated with and coupled to said switch fabric, a

plurality of line cards having input and output ports for receiving data from and transmitting data over corresponding communication links, wherein said line cards are each communicatively coupled to said switch fabric via said first and second data paths; said line cards, said first and second data paths and said switch fabric forming a data plane for forwarding data units received at an input port of a first line card to an output port of a second line card via said switch fabric over the associated data path; first and second control processors"; and see the master selection logic 500 in Fig. 5, for selectively forwarding the data between line cards, thus turning on and off the data communication between the line cards).

Regarding claim 12, wherein the fourth Ethernet connector allows a first switch to turn on and off data communication between the first Ethernet connector and the second Ethernet connector and via the third and fourth dedicated links (see Claim 1, "first and second data paths associated with and coupled to said switch fabric, a plurality of line cards having input and output ports for receiving data from and transmitting data over corresponding communication links, wherein said line cards are each communicatively coupled to said switch fabric via said first and second data paths; said line cards, said first and second data paths and said switch fabric forming a data plane for forwarding data units received at an input port of a first line card to an output port of a second line card via said switch fabric over the associated data path; first and second control processors"; and see the master selection logic 500 in Fig. 5, for selectively forwarding the data between line cards, thus turning on and off the data communication between the line cards).

Regarding claim 14, an Ethernet bridging unit that switches Ethernet packets, wherein the third single Ethernet connector, when the first aggregation card is plugged into the first aggregation slot (see Sikdar in the rejection above, which shows the plugging of the aggregation card into the aggregation slot; or see Fig. 1 of Barbas), allows the Ethernet bridging unit to turn on and off data communication that is between the first Ethernet connector and the second Ethernet connector and that is via the first and second dedicated links (see Claim 1, "first and second data paths associated with and coupled to said switch fabric, a plurality of line cards having input and output ports for receiving data from and transmitting data over corresponding communication links, wherein said line cards are each communicatively coupled to said switch fabric via said first and second data paths; said line cards, said first and second data paths and said switch fabric forming a data plane for forwarding data units received at an input port of a first line card to an output port of a second line card via said switch fabric over the associated data path; first and second control processors"; and see the master selection logic 500 in Fig. 5, for selectively forwarding the data between line cards, thus turning on and off the data communication between the line cards).

Regarding claim 15, wherein, when the first node card, the second node card, and the first aggregation card are plugged into the first node slot, the second node slot, and the first aggregation slot respectively, the Ethernet bridging unit of the first aggregation card (see Bridges 300 and switch fabric subsystem 308 in Fig. 4) is coupled to the third Ethernet connector and selectively switches Ethernet packets between the first node card and the second node card via the first and second

dedicated link (see Claim 1, "first and second data paths associated with and coupled to said switch fabric, a plurality of line cards having input and output ports for receiving data from and transmitting data over corresponding communication links, wherein said line cards are each communicatively coupled to said switch fabric via said first and second data paths; said line cards, said first and second data paths and said switch fabric forming a data plane for forwarding data units received at an input port of a first line card to an output port of a second line card via said switch fabric over the associated data path; first and second control processors"; and see the master selection logic 500 in Fig. 5, for selectively forwarding the data between line cards, thus turning on and off the data communication between the line cards).

Regarding claim 18 wherein, when the first node card, the second node card, and the second aggregation card are plugged into the first node slot, the second node slot, and the second aggregation slot respectively, the Ethernet bridging unit of the second aggregation card (see Bridges 300 and switch fabric subsystem 308 in Fig. 4) is coupled to the third Ethernet connector and selectively switches Ethernet packets between the first node card and the second node card via the third and fourth dedicated link (see Claim 1, "first and second data paths associated with and coupled to said switch fabric, a plurality of line cards having input and output ports for receiving data from and transmitting data over corresponding communication links, wherein said line cards are each communicatively coupled to said switch fabric via said first and second data paths; said line cards, said first and second data paths and said switch fabric forming a data plane for forwarding data units received at an input port of a first line

card to an output port of a second line card via said switch fabric over the associated data path; first and second control processors"; and see the master selection logic 500 in Fig. 5, for selectively forwarding the data between line cards, thus turning on and off the data communication between the line cards).

Regarding claim 24, wherein the Ethernet bridging unit of the aggregation card receives a packet from the first node card via the first dedicated link and further selectively transmits the received packet to the second node card via the second dedicated link. (see Claim 1, "first and second data paths associated with and coupled to said switch fabric, a plurality of line cards having input and output ports for receiving data from and transmitting data over corresponding communication links, wherein said line cards are each communicatively coupled to said switch fabric via said first and second data paths; said line cards, said first and second data paths and said switch fabric forming a data plane for forwarding data units received at an input port of a first line card to an output port of a second line card via said switch fabric over the associated data path; first and second control processors"; and see the master selection logic 500 in Fig. 5, for selectively forwarding the data between line cards, thus turning on and off the data communication between the line cards).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Sikdar using features, as taught by Barbas, in order to control the use of limited resources by selectively connecting only line cards that have been determined to enter an active state.

7. Claim 11, 21 and 25are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior art Sikdar and Barbas as applied to claim 10, 14 and 24above, and further in view of Dove (US 2005/0036506).

Sikdar and Barbas disclose the claimed limitations as shown above.

Sikdar and Barbas do not disclose the following features: regarding claim 11, 21 and 25, wherein Ethernet transmit pins of the first and second Ethernet connectors are connected to Ethernet receive pins of the third Ethernet connector, and Ethernet receive pins of the first and second Ethernet connectors are connected to Ethernet transmit pins of the third Ethernet connector.

Dove discloses a method for automatically switching media connections when operating in forced speed and duplex mode including the following features.

Regarding claim 11, 21 and 25, wherein Ethernet (see “Ethernet” recited in paragraph 45 on page 5) transmit pins (see transmit pins 3 and 6 and connection 22 in Fig. 2) of said at least one node slots (see rejection to claim 10 using Prior art 1) the first and second Ethernet connectors are connected to Ethernet receive pins of the third Ethernet connector (see receive pins 1 and 2 and connection 22 in Fig. 2) of said at least one aggregation slot (see rejection to claim 10 using Prior art 1) and Ethernet (see “Ethernet” recited in paragraph 45 on page 5) receive pins (see receive pins 1 and 2 and connection 24 in Fig. 2) the first and second Ethernet connectors (see rejection to claim 10 using Sikdar and Barbas) are connected to Ethernet transmit pins (see transmit pins 3 and 6 and connection 24 in Fig. 2) of the third Ethernet connector (see rejection to claim 10 using Sikdar and Barbas).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Sikdar and Barbas by using the features, as taught by Dove, in order to connect the node/aggregation cards to the card slots.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sikdar and Barbas as applied to claim 14 above, and further in view of Schwartz (US 6,947,410).

Sikdar and Barbas disclose the claimed limitations as shown above.

Sikdar and Barbas do not disclose the following features: regarding claim 22, wherein the Ethernet bridging unit of the first aggregation card is coupled to an external Ethernet connector connection to an external address.

Schwartz discloses a system for communicating data packets using a backplane switch including the following features.

Regarding claim 22, wherein the Ethernet bridging unit of the first aggregation card (see switch fabric 80 of the switch fabric card shown in Fig. 10 of Sikdar, which is coupled to all the connection ports) is coupled to an external Ethernet connector connecting to an external address (see Fig. 1 of Schwartz external connection port 42 and external address 22a and 22b).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Sikdar and Barbas using features, as taught by Schwartz, in order to allow communications with external devices.

Allowable Subject Matter

9. Claims 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims as well as eliminating the problem addressed in the 35 USC 112 rejection of the claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUTAI KAO whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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